A New Member of the Genus *Atagema* (Gastropoda: Nudibranchia) a Genus New to the Pacific Northeast

BY

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(5 Text figures)

Despite the fact that the Pacific Northeast has been extensively worked with regard to the nudibranchiate fauna there still remains a great deal to be done. In addition to much review work that is needed, there seem to remain many species that have been missed, due either to faulty collecting, or, more likely, due to their rarity.

The latter is the case with the following animal. It is one of the "novelties" MARCUS (1961, page 56) speaks of, that can be expected to turn up on this coast with the recent increase of collecting activity.

I wish to thank all those who were kind enough to send me literature and give assistance in other ways. I am especially grateful to Mr. Wesley Farmer of the San Diego Museum of Natural History and Dr. William Hazen of San Diego State College for their help and encouragement in preparing this paper and Jessie Zimmerman for the preparation of the figures. The work was conducted at San Diego State College.

Cryptobranchia

DORIDIDAE

Archidoridinae

Atagema quadrimaculata COLLIER, spec. nov.

The one animal collected measured 30 mm in length and 11 mm in width when actively crawling. Preserved it measures 16 mm and 8 mm respectively. The body form is similar to the shape of the other members of the genus with the front rounded and the posterior end slightly pointed. The foot measures 25 mm in length and 8 mm in width; it extends about 2 mm beyond the notum at the posterior end.

The notum has a coarse texture due to the many small papillae covering it as well as the spicules in it. The notum is a very light beige, almost white, with the papillae a darker beige. The presence of these papillae gives the animal a beige sponge-like appearance. The color of the

animal is kept to some degree in the preserved form although it tends to bleach out around the edge of the notum. The side of the foot has brownish-beige spots on it which are quite dense at the base but become sparser until they end at the point where the foot joins the notum. These spots show through the foot, to some degree giving the appearance that the sole of the foot has a color

Figure 1: Outer Laterals

pattern. On close observation, the underside of the notum is reticulated by fine white lines. There is a very prominent dorsal ridge which begins slightly posteriorly to the rhinophores and extends along the mediodorsal line to end in a prebranchial hump.

There are two pairs of laterally located dark brown to black spots on the notum. These spots are in a depression caused by the absence of papillae and measure one to two millimeters in diameter. One pair is located immediately posterior to the rhinophore sheaths at the base of the dorsal ridge. The other pair is posterior to the prebranchial hump, lateral to the branchial valves.

There are three horizontal branchial valves which project posteriorly and correspond to three of the five bipinnate gills which they protect. Two of the gills have no corresponding valve. The gills were never observed to project farther than ½ mm beyond these valves in the extended position. Because the branchial valves are horizontal, the branchial cavity opens posteriorly instead of dorsally.

The retractile rhinophores are contained in sheaths

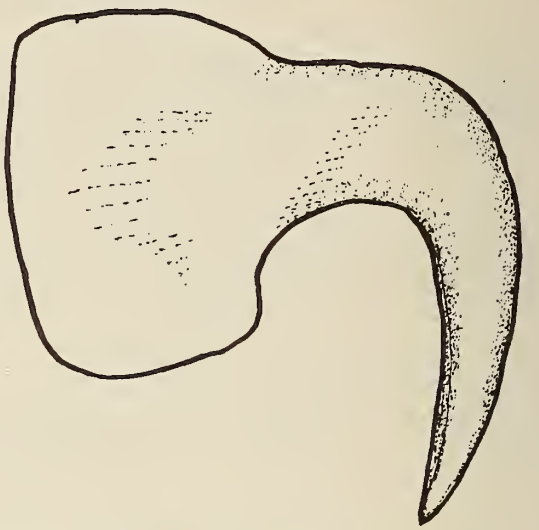

Figure 2: Single Tooth

two millimeters high which have the same texture and color pattern as the notum. The rhinophores are two millimeters high when extended and have 16 leaves. They are white at the base with the distal ¾ mm brown.

At the anterior end of the foot is a strongly indented

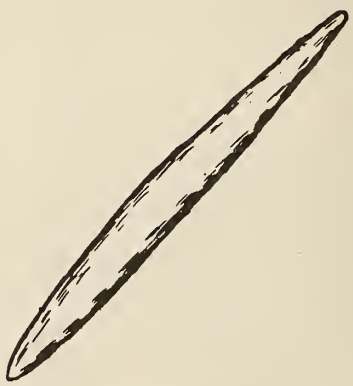

Figure 3: Spicule

upper lip with two oral tentacles visible above the lip (text figure 4). The upper lip normally hides the mouth.

There is a weak, rodless labial cuticle. The radular formula is 18 x 18 - 19·0·19 - 18. The teeth are strongly hooked and without denticles. The outer and inner laterals are small (40 μ) and the teeth get progressively larger from one to seven, with the seventh through eleventh

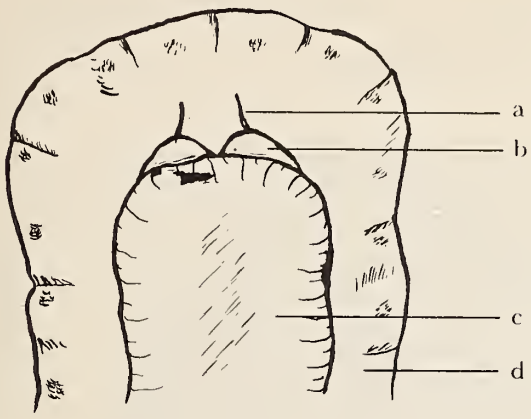

Figure 4: Ventral View of the Anterior End of *Atagema quadrimaculata* Collier, spec. nov.
a. oral tentacles b. lip c. foot d. notum

being approximately the same size (160 μ). They then get progressively smaller.

The spicules of the notum are about 100 μ long but vary greatly, with some as large as 270 μ.

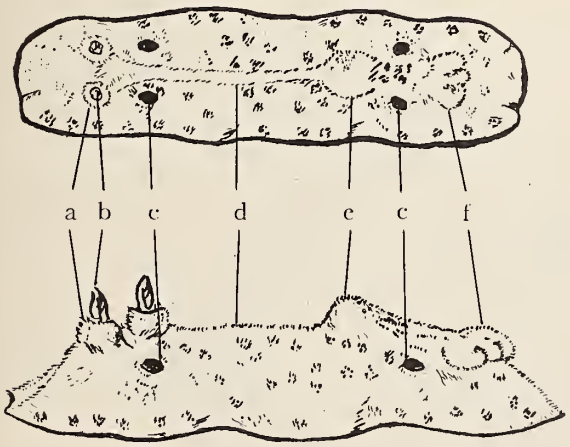

Figure 5: Lateral and Dorsal View of the Living Animal of *Atagema quadrimaculata* Collier, spec. nov.
a. rhinophore sheath
b. rhinophore
c. dark brown spots
d. dorsal ridge
e. prebranchial hump
f. branchial valves

The genital aperture is located approximately one quarter of the total length from the anterior end on the right side.

Type Locality: One specimen in the intertidal region of Sunset Cliffs, San Diego, California (Lat. 32 ° 42 ′ N, Long. 117 ° 16 ′ W).

REMARKS

This genus is exotic with only a few species known from the South Seas area and the Mediterranean. Most species are based on only one or two specimens. The genus is characterized by the strongly hooked teeth, an unarmed penis, and in most members, the presence of the prebranchial hump and dorsal ridge.

The name *quadrimaculata* was chosen to call attention to the four black spots on the notum, which together with the radular formula can be used to distinguish *Atagema quadrimaculata* from the other members of the genus. The radular formula is considerably smaller than in the other members of the genus, which have formulae of at least 30 x 29.0.29.

The holotype is deposited in the California Academy of Sciences Type Collection, No. 00 000. It will be incorporated in the Frank Mace MacFarland Memorial Collection of Nudibranchs.

LITERATURE CITED

Alder, Joshua, & Albany Hancock

1864. Notice on a collection of nudibranchiate mollusca made in India, etc. Trans. Zool. Soc. 5: 133 - 184; figs. 28 - 33. (28 April 1864)

Gray, Maria Emma

1850. Figures of molluscous animals selected from various authors; etched for the use of students. London, Brown, Green, & Longmans. 4: iv + 219 pp.

Lance, James R.

1961. A distributional list of Southern California Opisthobranchs. The Veliger 4 (2): 64 - 69

Marcus, Ernst

1961. Opisthobranch mollusks from California. The Veliger 3 (Supplement, pt. I): 1-85; plts. 1-10. (Feb. 1, 1961)

O'Donoghue, Charles H.

1926. A list of the nudibranchiate mollusca recorded from the Pacific coast of North America, with notes on their distribution. Trans. Roy. Canad. Inst. 15 (2): 199-247.

Pruvot-Fol, Alice

1951. Études des nudibranches de la Méditerrannée (2 partie). Arch. Zool. Expér. Génér. 88: 1-80; 42 figs.; plts. 1 - 4

1954. Mollusques opisthobranches. Faune de France. Paris, Lechevalier. 58: 460 pp.; 173 figs.; 1 plt.